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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,270	10/12/1999	YOUN-HAN CHANG	400396/YPLEE	5941

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LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/13/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/416,270

Applicant(s)

Chang

Examiner

Tracy Dove

Art Unit

1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Nov 1, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-34 is/are pending in the application.
- 4a) Of the above, claim(s) 23-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

This Office Action is in response to the communication filed on 11/1/02. Applicant's arguments have been considered, but are not persuasive. Newly added claims 22-33 have been renumbered as claims 23-34.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/1/02 has been entered.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). The amendment filed 2/28/02 added claims 17-22.

Misnumbered claims 22-33 have been renumbered as claims 23-34.

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Election/Restriction

Newly submitted claims 23-29 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the original claims were directed toward a lithium polymer battery (product), while new claims 23-29 are directed toward a method of making a lithium polymer battery (method).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23-29 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-34 are rejected under 35 U.S.C. 102(b)/103(a) as being anticipated by, and alternatively unpatentable over, Fauteux et al., US 4,925,752.

Fauteux teaches a solid state alkali metal anode cell having significant improvements in cell impedance and, in turn, rechargeability is provided (col. 2, lines 31-36). The cell comprises an alkali metal anode layer, a solid ionically conducting electrolyte layer and a cathode/current collector layer (see abstract). The cathode current collector has a plurality of surface voids (openings) which contain the cathode composition (active material). See col. 3, lines 44-50. The alkali metal anode layer may be a lithium coated foil such as copper foil. The copper foil (current collector) has a layer of lithium (active material) deposited on its surface. See col. 3, lines 64-66. The solid electrolyte layer includes an ionizable salt and a polymer, and is located between the anode and the cathode. The cathode collector may be made of aluminum. See col. 5, lines 5-62. See also claim 12.

Specifically, Fauteux teaches a solid state electrochemical cell having a porous cathode current collector. The cathode/current collector layer comprises a substrate which has a plurality of surface voids. As shown in Fig. 1, the substrate is in the form of a screen or grid. However, other physical forms such as foamed states, etched foils, electroplated films, woven or non-woven fabrics may be utilized as the substrate. A collector of expanded metal is disclosed in col. 2, lines 54-63. The cathode composition (active material) is coated onto at least one surface of

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the positive current collector. See col. 3, lines 44-53. The alkali metal anode layer may take the form of a lithium foil, a lithium coated foil such as nickel or copper foil having a layer of lithium deposited on its surface or a lithium alloy. See col. 3, lines 63-66. The electrolyte layer, which is ionically but not electrically conductive, takes the form of a solid material (separator) and is laminated to the alkali metal anode layer and the cathode/current collector layer. See col. 4, lines 3-6. Cathode compositions are disclosed at col. 5, lines 21-44. To produce the cathode/current collector material, the materials used to form the cathode composition are mixed together (slurry) and coated onto the surface of the current collector substrate (col. 5, lines 63-66).

Thus the claims are anticipated.

The claims are alternatively unpatentable because the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. In re Fessman. Thus, whether the anode is formed of a lithium foil (no plasticizer needed), a lithium coated foil such as copper foil or a carbon containing slurry coated on a metal foil, a lithium polymer battery is the end result.

Response to Arguments

Applicant's arguments filed 11/1/02 have been fully considered but they are not persuasive.

Applicant argues the method of the instant claims results in a relatively low internal resistance polymer battery. Note Fauteux teaches a solid state alkali metal anode cell having

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significant improvements in cell impedance and, in turn, rechargeability is provided (col. 2, lines 31-36). Applicant points to data shown at page 6, however, in order to show evidence of unexpected results, Applicant must distinguish the claimed invention over the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

January 8, 2003


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700